

In view of the foregoing authority, Applicants respectfully submits that the rejection of claims 1, 3, and 35 based on non-statutory double patenting should be withdrawn for at least the reason that the claims of the cited application do not teach or suggest the invention recited in the rejected claims.

Claim 1 of the present application calls for an assisting device for applying an assisting force to a pressurizing piston of a master cylinder. Claim 1 of the present application further calls for a sensing device for detecting at least one of a brake operating condition quantity indicative of an operating condition of a brake operating member and a vehicle running condition quantity indicative of a running condition of an automotive vehicle.

Claim 1 of the present application further calls for the recited assisting device to include an assisting drive force control device electrically operable to control the assisting drive force on the basis of the quantity detected by the sensing device. By contrast, claim 1 of the co-pending application does not teach or suggest an assisting device as recited in claim 1 of the present application, wherein the assisting device operates on the basis of a quantity detected by a sensing device.

On the other hand, claim 1 of the co-pending application recites a pressurizing piston defining a rear assisting pressure chamber on its rear side. Moreover, it is noted that claim 1 of the co-pending application will be further differentiated from the claims of the present application by amendments filed in a response to an Office Action pending in the co-pending application. In the response, the applicant intends to amend claim 1 to recite an input member operable to receive an input force based on an operation of a brake operating member, and a closure member fluid-tightly closing an open end of a cylinder housing and cooperating with the cylinder housing and pressurizing piston to define the rear assisting pressure chamber. Claim 1 of the co-pending application will be further amended to recite that the input member extends through the closure member such that the input force is applicable directly to the pressurizing piston rather than via the fluid in the rear assisting pressure chamber, irrespective of an amount of the input force.

By contrast, claim 1 of the present application does not require a rear assisting pressure chamber partially defined by a closure member through which an input member extends to apply an input force to a pressurizing piston, as recited in claim 1 of the pending application as amended in response to the pending Office Action as described above.

Additionally, claim 1 of the co-pending application recites an electrically controlled assisting pressure control device for controlling and assisting hydraulic pressure, such that a

boosting ratio, which is a ratio of an output of a pressurizing piston to an input of the pressurizing piston, is controlled to be a predetermined value. This recitation is absent from claim 1 of the present application.

Thus, claim 1 of the present application has been demonstrated to be clearly differentiated from claim 1 of the co-pending application. Claims 2-6, 11 and 14 of the co-pending application depend from claim 1 of the co-pending application. Claims 2-6, 11 and 14 clearly do not independently or collectively teach or suggest the recitations of claim 1 of the present application. For example, claims 2-6, 11 and 14 do not teach or suggest an assisting device as recited in claim 1 of the present application, wherein the assisting device comprises an assisting drive force control device electrically operable to control the assisting drive force on the basis of a quantity detected by a sensing device. Therefore, since claim 1 of the co-pending application is clearly differentiated from claim 1 of the present application, claims 2-6, 11 and 14 of the co-pending application are even further differentiated from claim 1 of the present application by virtue of incorporating features of claim 1 of the co-pending application.

Claim 3 of the present application is dependent upon claim 1 of the present application. Thus, claim 3 of the present application is even further differentiated from claim 1 of the co-pending application, and claims 2-6, 11 and 14 of the co-pending application dependent thereon, by incorporation of the features of claim 1 of the present application.

In view of the foregoing, claims 1-6, 11 and 14 of the co-pending application fail to render claims 1 and 3 of the present application obvious, and accordingly, withdrawal of the rejection of claims 1 and 3 under the judicially created doctrine of obviousness-type double patenting is respectfully requested.

Clear distinctions also exist between claim 35 of the present application and claims 1-6, 11 and 14 of the co-pending application which render the asserted rejection for obviousness-type double patenting untenable. For example, claim 35 of the present application requires a master cylinder characteristic control device to control the amount of fluid in a pressurizing chamber of a master cylinder. By contrast, claim 1 of the co-pending application recites an assisting pressure control device which controls an assisting hydraulic pressure in a rear assisting pressure chamber.

Further, claim 35 of the present application calls for a sensing device for detecting a brake operating condition quantity, and further calls for the master cylinder characteristic control device to control the amount of fluid in the pressurizing chamber based on the brake

operating condition quantity detected by the sensing device. In contrast, claim 1 of the co-pending application in no way suggests a master cylinder characteristic control device as recited in claim 35 of the present application, wherein the characteristic control device controls an amount of the fluid in the pressurizing chamber on the basis of a brake operation condition quantity detected by a sensing device.

Moreover, as noted above, claim 1 of the co-pending application will be amended in a forthcoming response to an Office Action to recite a rear assisting pressure chamber partially defined by a closure member through which an input member extends to apply an input force to a pressurizing piston. This recitation is absent from claim 35 of the present application.

Additionally, as also noted above, claim 1 of the co-pending application recites an electrically controlled assisting pressure control device for controlling an assisting hydraulic pressure, such that a boosting ratio, which is a ratio of an output of a pressurizing piston to an input of the pressurizing piston, is controlled to be a predetermined value. This recitation is absent from claim 35 of the present application.

Claims 2-6, 11 and 14 of the co-pending application depend from claim 1 of the co-pending application. Claims 2-6, 11 and 14 do not independently or collectively teach or suggest the features recited in claim 35 of the present application. For example, claims 2-6, 11 and 14 of the co-pending application do not teach or suggest a master cylinder characteristic control device as recited in claim 35 of the present application, wherein the characteristic control device controls an amount of the fluid in the pressurizing chamber on the basis of a brake operation condition quantity detected by a sensing device. Moreover, claim 2-6, 11 and 14 are even further differentiated from claim 35 of the present application by virtue of incorporating the features of claim 1 of the co-pending application, which, as demonstrated above, is clearly distinct from claim 35 of the present application.

In view of the foregoing, it is clear that the scope of claims 1-6, 11 and 14 of the co-pending application, and claims 1, 3 and 35 of the present application are not co-extensive. Therefore, concerns about an unjustified timewise extension of the "right to exclude" are unwarranted. Accordingly, withdrawal of the rejection of claims 1, 3 and 35 of the present application for obviousness-type double patenting is respectfully requested.

Claims 1 and 35 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of co-pending application 09/481,273.

The requirements for sustaining a rejection under the judicially created doctrine of obviousness-type patenting have been outlined above. Co-pending application No. 09/481,273 also fails to meet the cited requirements.

Claims 1 and 35 of the present application have been discussed in detail above. Claim 1 of the co-pending application 09/481,273 is clearly differentiable from claims 1 and 35 of the present application. For instance, claim 1 of the co-pending application recites a booster and further recites a pressurizing piston of a master cylinder which receives the output force of the booster. Moreover, claim 1 of the co-pending application recites a pressure increasing device which pressurizes fluid in a rear pressurizing chamber defined by the pressurizing piston. By contrast, claims 1 and 35 of the present application do not call for a booster, nor do they call for a pressurizing piston which receives the output force of a booster. Moreover, claims 1 and 35 do not require a rear pressurizing chamber defined by a pressurizing piston as recited in claim 1 of the co-pending application.

Among other features, also absent from claim 1 of the co-pending application is the sensing device recited in claims 1 and 35 of the present application, wherein an assisting device, or master cylinder characteristic control device, as recited in claims 1 and 35 respectively, operate on the basis of the brake operating condition quantity detected by the sensing device.

In view of the above, claims 1 and 35 of the present application, and claim 1 of co-pending application 09/481,273 are not co-extensive. Consequently withdrawal of the rejection of claims 1 and 35 for obviousness-type double patenting in view of claim 1 of co-pending application 09/481,273 is respectfully requested.

Claims 1, 3, 21, 35-37 and 39 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Sorensen (U.S. Patent No. 5,549,361) in view of Ganzel (U.S. Patent No. 6,053,582).

Requirements for sustaining a rejection under § 103 have been outlined above. The cited references fail to support the asserted rejection in view of the cited authority.

Sorensen and Ganzel fail to teach or suggest the claimed invention, either independently or in combination. The primary reference Sorensen, for example, fails to suggest an assisting device as recited in independent claim 1. For instance, an assisting device according to claim 1 applies an assisting drive force to a pressurizing piston which is different than a primary drive force to be applied to the pressurizing piston.

One possible embodiment of the claimed assisting device is illustrated in Figure 1 of the present application. The embodiment is described, for instance, at page 67, lines 16 *et seq.* of the present specification. As described, the assisting device comprises an assisting cylinder 78. The assisting cylinder 78 comprises an assisting piston 92, which as shown in Figure 2 is operatively connected to a brake pedal 10 by a piston rod 95.

On the other hand, a master cylinder 12 comprising a pressurizing piston 34 is connected to brake pedal 10 by a rod 98. Thus, as recited in claim 1 an assisting drive force (applied via rod 95) is different from a primary drive force (applied via rod 98).

Turning now to Sorensen, a fundamentally different structure is disclosed. As can be seen in Figure 1 of Sorensen, a brake operating member 72 is connected to a booster 24, but no independent connection of the brake operating member 72 to a master cylinder and pressurizing piston is disclosed. Accordingly, Sorensen in no way suggests the assisting device recited in claim 1. Further, as appreciated by the Examiner, Sorensen fails to disclose a sensing device as recited in claim 1, wherein the claimed assisting device is electrically operable to control the drive force on the basis of a quantity detected by the sensing device. The quantity detected by the sensing device may be, for example, one of a brake operating condition quantity and vehicle running condition quantity.

Sorensen also fails to suggest the features of independent claim 35. Among other features, Sorensen fails to disclose a master cylinder characteristic control device as claimed. Features of the claimed master cylinder characteristic control device are summarized in part on page 102 of the present Specification, beginning at line 3. For example, the fluid pressurizing characteristic of the master cylinder 12 may be controlled by adjusting the operating stroke S by the stroke adjusting device 128 (details of the operation are described in preceding pages of the Specification). Similarly, the assisting device 81 described above can control the fluid pressurizing characteristic of the master cylinder 12. Thus, the assisting device 81 and the stroke adjusting device 128 may be considered to be alternate forms of the claimed master cylinder characteristic control device.

Turning now to Sorensen, there is no suggestion of a master cylinder characteristic control device as recited in claim 35. For instance, since Sorensen does not disclose a relationship of a master cylinder to the boosting device 24, there is no teaching or suggestion of a master cylinder characteristic control device for controlling an amount of fluid in the pressurizing chamber of a master cylinder, as recited in claim 35.

Clearly, Ganzel does not independently teach or suggest the features recited in claims 1 and 35. It is noted that the Examiner contends that Ganzel teaches sensing means according to the invention (item 6, page 3 of the above-identified Office Action). However, a review of Ganzel shows that no specific use of an output signal of the force transducer 11, alleged to be the equivalent of the claimed sensing device, is described. Rather, Ganzel merely states that "[a] force transducer 11 measures the force applied to the booster by the pedal 8" (col. 5, lines 48-49). In particular, there is no suggestion of controlling an assisting drive force on the basis of a brake operating condition detected by the sensing device as recited in claim 1, nor of controlling an assisting drive force on the basis of a running condition detected by the sensing device, as further recited in claim 1. Further, Ganzel does not suggest a sensing device for detecting a brake operating condition quantity indicative of an operating condition of a brake operating member, as recited in claim 35. Therefore, even in combination, Sorensen and Ganzel cannot render claims 1 and 35 obvious.

Claims 3, 21 and 36-37 are dependent upon claim 1, and consequently incorporate its features. Claim 39 is dependent upon claim 35 and thus incorporates its features. Therefore, claims 3, 21, 36, 37 and 39 are not rendered obvious by Sorensen and Ganzel for at least the reasons discussed in connection with independent claims 1 and 35.

Accordingly, withdrawal of the rejection of claims 1, 3, 21, 35-37 and 39 as being unpatentable in view of Sorensen and Ganzel is respectfully requested.

Claims 38 and 40 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sorensen in view of Schonlau (U.S. Patent No. 4,914,917).

Claim 38 is dependent upon claim 1, and claim 40 is dependent upon claim 35. As demonstrated above, the primary reference, Sorensen, fails to render independent claims 1 and 35 obvious. Moreover, Schonlau does not independently render claims 1 and 35 obvious. Therefore, the combination of Sorensen and Schonlau cannot render the independent claims obvious. Accordingly, since dependent claims 38 and 40 incorporate the features of independent claims 1 and 35, respectively, claims 38 and 40 are allowable over the combination of Sorensen and Schonlau for at least the reasons discussed in connection with claims 1 and 35.

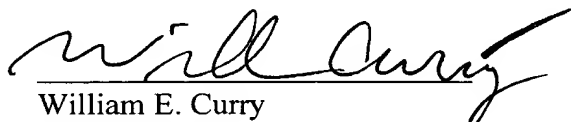
Accordingly, withdrawal of the rejection of claims 38 and 40 as being unpatentable over Sorensen and Schonlau is respectfully requested.

In light of the above discussion, applicant respectfully submits that the present application is in aspects in allowable condition, and earnestly solicits favorable reconsideration and early issuance of a Notice of Allowance.

The Examiner is invited to contact the undersigned at (202) 220-4323 to discuss any matter concerning this application. The Office is authorized to charge any fees under 37 C.F.R. 1.16 or 1.17 related to this communication to Deposit Account No. 11-0600.

Respectfully submitted,

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